

## **Students' Perception of Computer-Based Examinations: A Case Study of Ladoke Akintola University of Technology, Ogbomoso Oyo State, Nigeria**

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**Abstract:** This study examined Undergraduate Students' Perception of Computer Based Examinations in the use of Library 101 computer based examination in LadokeAkintola University of Technology, Ogbomoso in Oyo State, Nigeria. The study covered students taken use of Library 101 examination. Questionnaires were used to generate data. The data collected covered five thousand (5000) population of hundred levels (100L) undergraduate students participated in the use of Library 101 computer-based examination. 10% of respondents were randomly selected which form a total number of five hundred respondents. Response rate of 400 out of 500 representing 80% was obtained for the data analysis. The result showed that a significant percentage of the respondents were either doing good or fairly good academically. 16% of the respondent claimed of very good in computer familiarity, 23% claimed of good while 21% were fairly good. 18.75% and 6.25% of both gender answered they have high computer familiarity. 16.25% and 8.75% agreed on very high of computer familiarity. 15% and 10% graded averagely while 13.75% and 11.25% admitted low computer familiarity. Due to the problems stated above such as computer familiarity, students' common attitude toward Computer-based examination, and other peculiar problems. Recommendation were offered towards the improvement on mistake in question and adequate time as the cause of students failure with CBE mode of assessment, training and retraining on general use of computer for students before participating in CBE system. Use of more robust software to prevent, detect and correction of mistakes. Problem such as logging on the system, software submission of answer, editing and security of the system. Administration should employ highly skilled professional who will attend to examinees' problem adequately.

**Keywords:** *Computer Base Examination (CBE), Computer, Students, University, Library, LAUTECH, Ogbomoso, Nigeria*

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### **I. INTRODUCTION**

The LAUTECH Library (Olusegun Oke Library) came into existence in July, 1990 and since then staff and students of the University have been using its resources. It is obviously observed that examination determine the level to which the educational objectives have been achieved as well as the degree to which educational institutions have served the needs of community and society (Shah, 2002). Examinations are not restricted to measure society educational objectives and needs but incorporate in a way of coping with the educational system (Havens, 2002). Rehmani (2003). briefly describe that 'examinations play a significant role in determining what goes on in the classroom in terms of what, and how students learn and can have impact on learning'. Wikipedia used test or examinations as alternative terms of assessment and defined it as: 'test or an examination (or exam) is an assessment indeed to measure a test-takers knowledge, skill, aptitude, physical, fitness or classification in many other topics'.

Different methods of examination were used in higher educational institutions to assess academic progress, for example, paper-pencil-based examinations, assignments, presentations, and etc... Levy and Ramim (2007) identified more than fifty varied techniques used within higher education for assessments purposes; the most commonly used are examinations. The rapid advancement of information and

CommunicationTechnologies (ICT) in teaching learning has shifted the paradigm. (Clariana&Wallace 2002) in their study find that: it is critical to realize that computer-based and paper-based tests, even with identical items, will not necessarily produce equivalent of student learning. From paper-pencil-based to computer-based system of examinations which are usually termed as Computer Assisted Testing, Computerized Assessment, Computer Based Testing (CBT), Computer Aided Assessment (CAA), Computer Based Assessment(CBA), Online Assessment, E- Assessment and Web-Based Assessment Zhenming et al (2003) and many others). Computer-based examination are the form of assessment in which the computer is an integral part of question papers' delivery, response storage, marking of response or reporting of results from a test or exercise. Zhao (2016) defined CAA as ' the use of computersfor assessing students' learning'.

Because of the inclusion of ICTs in education, it is necessary to re- considered and re-thinks, andchange the traditional examination methods. Electronic assessment tools had reduced the burden of and facilitate to conduct examinations purposefully. Computer- based examination can be to promote more effective learning by testing a range of skills, knowledge and understanding. Accessing and managing of information and developing communication skills are possible to access online which cannot be accessed in regular essay based examinations (.Pomplun& Custer, 2005) quoted Weaver (2003) that' ... diversity decreases the dependency on the traditional formal examination, a method that does not suit the learning styles of many students. The key factor in determining whether an assessment program is good depends on whether the assessment task are relevant to the aims and intended learning outcomes for the course, not forgetting the attitudes and skills that are to be tested.

Therefore, it was significantly important to perceive university students' approaches towards ComputerBased (CBE) examinations.

## **II. LITERATURE REVIEW**

According to Clarke- Midura& Dede (2010).computer-based examination offers several advantages over traditional paper-and-pencil or paper-based tests. Computer and related technologies provide powerful tools to meet the new challenges of designing and implementing assessments methods that go beyond the conventional practices and facilitate to record a broader repertoire of cognitive skills and knowledge. Technology based assessment provide opportunities to measure complex form of knowledge and reasoning that is not possible to engage and assess through traditional methods.

Noyes and Garland (2008 p1371) also conducted study to examine the impact on student performance of a computer-based-examination (CBE) as compared to a traditional testing method. Three different research tool were used in the study to collect and interpret results i.e. questionnaires completed by students to express their CBE experiences; faculty interviews which had administered computer-based-examination to determine students' perception of using this medium of testing and analysis of students test and scores in both conventional paper-based-tests (PBT) and computer-based-examination (CBE).Total number of 133 students out of which 91 have no prior of experience of CBE and 42 had experienced the same in their previous courses. On the question of ease of use, majority of the students (59%) found the software to be easy, 29% found it to be moderate and 12% found the software to be somewhat difficult to use.

(Gamire& Pearson, 2006) investigated to confirm several key factors in computer-based-examination versus paper-based-examination. Factors of the study were content familiarity, competitiveness, and gender. The study used a post-test only designed with one factor, test mode (Computer-based and paper- based).Results showed that computer-based-examination delivery impacted positively on student' scores as compared to paper-based-test.Some studies suggest that students do not obtain the same results when they take an identical test on both computer and on paper. This finding is referred to as a "test mode effect". The test mode effect is the observation that performance tests measuring similar knowledge and skills yield different results when they are administered on computers versus with paper and pencil. For state and national assessments comparability across delivery modes is important because assessments are usually he offered on both computer and paper, since most institutions don't have the infrastructure and equipment to test all of their students by computer.

In these cases, scores from the two modes should interchangeable. Comparability is also important when there is a transition from paper and pencil to computer based delivery and educators want to compare students' performance across time (Csapo etal.2010). Clariana and Wallace (2002) investigated to confirm several key factors in CBT versus PPT assessment. The study used a post- test only design with one factor, test mode (Computer-Based and Paper-based). Students' score on 100- items multiple choice items and student' self- report a distance learning survey were treated as dependent variables. Results show that CBT delivery impacted positively on students' scores as compared to PPT. The study found that the CBT group out-performed the PPT group. Gender competitiveness, and computer familiarity were not related to this performance difference, through content familiarity was.

### **Statement of the Problem.**

Management of LadokeAkintolaUniversity of Technology (LAUTECH) Ogbomosho, has been recently implemented the use of computer base examination(CBE) to update the knowledge of students .The advantages of using computer based technology for educational and examination assessment in a globalization sense have been recognized and these will include time saving , less demand upon lecturers , lower administrative cost among others. In recognizing this system advantage level, it is highly important to explore the relationship between the mode of assessment and the behavior as well as perception of students being assessed because the assumption of comparability between computer based examination(CBE) and paper based test(PBT) without proper investigation within that particular testing context is inappropriate. Electronic problems are obvious, they have been known to happen, and for example where computer system crashes can void the efforts of large numbers of exams takers. These conflicting positions serve as the justification for this study. Summarily, computer based examination (CBE) in any given context is high-lighted by the following factors: acceptability by the students, validity and reliability, compliance with the standard guidelines and comparability with paper based test(PBT).

### **Objectives of the Study:**

This study was conducted to achieve the following objectives:

1. To ascertain the academic performance of students in using computer-based examination.
2. To know the level of familiarity with computer-based-examination system among undergraduate students of 100 level.
3. To examine the students common attitude toward computer-based-examination.
4. To be aware of the general problems faced by students in using computer-based-examination system.

### **Research Questions:**

The following five research questions were formulated in addressing the problems identified in this study:

1. What are the academic performances of students using (CBE) system?
2. What are the levels of computer familiarity among students using (CBE) system?
3. What are the students' common attitudes towards (CBE) systems?
4. What are the general problems faced by students using (CBE) system?
5. What are the helpful solutions to provide in solving problems faced by students of (CBE) system?

### **Scope of the Study:**

The scope of this study focuses on the investigating the undergraduate students' perception in the use of Library 101 Computer Based Examination in LadokeAkintola University of Technology (LAUTECH) Ogbomosho, Nigeria. A total number of 500 students shall be selected from 100 level undergraduate students to form the population for this study. While simple random sampling technique will be used to select the respondents.

### **Significance of the Study:**

The significance of this study features in the following:

- 1.The findings of this study will trace out the point of concern are students' attitude about convenience and control, validity and general anxiety about computer itself, and more over about their level of experience in using of computer .
2. The findings of this study will also provide information about the advantage of using computer technology for educational assessment in a worldwide sense have been recognized which among the time saving, less demand upon lecturers and lower administrative cost.
3. This study will reveal the conveniences and hardship between the computer based examination (CBE) and paper-based-examination (PBE).
4. This study will also find out the constraints being faced by students in adopting computer based examination (CBE) systems.
5. This study will find solution to the existing problems.

## **III. METHODOLOGY**

Questionnaire was used to collect the data for the study. The data collected covered five thousand (5000) population of hundredlevel (100 level) undergraduate students participated in the use of Library 101 computer-based-examination. 10% of respondents were randomly selected. Hence, a total of five hundred (500) students constituted the sample for the study. Out of five hundred (500) questionnaires issued to the respondents; four hundred (400) were duly filled by the respondents and returned which formed the basis of the analysis.

#### IV.ANALYSISAND RESULT

500 sets of questionnaire were distributed to all 100 level students doing use of library 101 computer-based-examination. The questionnaires were personally administered to the respondents, while 400 responses were retrieving, this shows that 80 percent were respond. Data collected was used for analysis through frequency count and percentages.

**Table 1: Respondents by sex**

Sex	Frequency (%)
Male	250 (62.5%)
Female	150 (37.5%)
<b>Total</b>	400 (100%)

The discussion that follows in this section attempt to present and analyze the data collected from the questionnaires completed by the respondents. Table1 provides brief summary of information on the gender of the respondents. This shows that about 62.5% were Male while 37.5% were Female. The proportion shows that male have a fair share as compared with their female counterparts.

**Table2: Distribution of Respondents by Age.**

Age	Frequency (%)
Less than 18yrs	70(17.5%)
18-21yrs	160(40.0%)
22-25yrs	90(22.5%)
26-29yrs	80(20.0%)
30yrs and above	-
No response	-
<b>TOTAL</b>	400(100%)

The table above shows that the student respondents is highly dominated by the age groups of 18-21 and 22-25. This could be a matured group of respondents. This indicates a better recognize capability and perceiving the score obtained in the CBE test is accurate. The sample shows that 70(17.5) of the respondents were bellow 18yrs. 80(20.0) were between 26-29 yrs. While 160(40.0) fell between 18-21yrs.80 (20.0) constituted 26-29yrs

**Table 3: Distribution of Respondents by academic performance**

Academic Performance	Frequency (%)
Very Good	65(16.25%)
Good	95(23.75%)
Fairly Good	155(38.75%)
Undecided	85(21.25%)
<b>TOTAL</b>	400(100%)

The table shows that a significant percentage of the student respondents are either doing good or fairly good academically. For this scenario an unusual small trend in the scores attained by students in CBE examcan be linked to some factors introduced by exam mode. Also such respondents can be termed higher-attaining students who will adapt quickly to any new assessment approach and quickly develop exam-taking strategies that benefit from the new approach.The respondents sample study revealed that 155(38.75) respondents were fairly good while 95(23.75) said good.65(16.25) respondents claimed of very good and85(21.25) were undecided

**Table 4: Respondents level of computer familiarity.**

Computer Familiarity	Male Frq (%)	Female Frq (%)	Both Frq (%)
Very high	65(16.25%)	35(8.75%)	100(25.00%)
High	75(18.75%)	25(6.25%)	100(25.00%)
Average	60(15.005%)	40(10.00%)	100(25.00%)
Low	55(13.75%)	45(11.25%)	100(25.00%)
<b>TOTAL</b>	255(63.75%)	145(36.25%)	400(100.00%)

From the above table, almost all respondents are computer literates. By implication the effects of computer experience on the achievement of students during their CBE exam in the context of the university is significant as tasks will be completed easily by such students without problems. The respondents sample study

revealed that 75(18.75%) and 25(6.25%) of both gender answered they have high computer familiarity. 65(16.25) and 35(8.75) also agree on very high of computer familiarity.60(15.00%) and 40(10.00%) said their computer familiarity is graded averagely while only 55(13.75%) and 45(11.25%) admitted low computer familiarity.

**Table 5:Students attitudes towards Computer Base Examination (C.B.E)**

Attitudes towards CBE	SA	AG	SD	DA	UD	TOTAL	%
The CBE exam was efficient.	15	12	11	9	2	47	11.75%
The CBE exam was positive	18	13	8	7	5	51	12.75%
Was the CBE exam was undertaking in a conduciveenvironment?	16	15	13	10	0	54	13.50%
The CBE exam was tedious.	13	18	12	11	2	56	14.00%
Did you think the CBE exam was better than paper based exam.	14	13	9	12	1	49	12.25%
Would you prefer CBE exam compare with paper based exam.	12	15	18	10	1	56	14.00%
Would you feel threatened by the CBE exam compared to the paper based exam	11	16	6	5	6	44	11.00%
Do you think student fairness and equity is ensured with CBE exam	10	15	8	7	3	43	10.75%
<b>Total</b>						<b>400</b>	<b>100%</b>

The result in Table 5 above shows that from the respondents 'perception, the most existence case in providing a positive, efficient and conducive environment for student examination with the percentage of 12.75,11.75 and 13.50, this has been good expression by the participants. The next little significant item with the percentage of 14.00, meaning this as attracted some of the CBE examinees' attention and seen as exam tedious and 14.00 prefer CBE comparative with paper based examination. Nonetheless CBE carry along with it its drawback as the next pinpointed area is the student fairness and equity is ensured with CBE exam at 10.75 percent. Respondents with 11.00 percent admitted that CBE exam feel threatened by the CBE exam compare to the paper based examination. Finally, Respondents with 12.25 percent did agreed substantially that 'the CBEexam was better than the paper based exam.

**Table 6: Problems faced by students using (CBE) system.**

Items	Frequency (%)
Problems with logging on	68(17%)
Accessing the software	67(16.75%)
Submitting your answers	65(16.25%)
Security of the system	64(16%)
Editing your answers	66(16.5%)
Did not encounter much problem	70(17.5%)
<b>Total</b>	<b>400(100%)</b>

According to Table 6 above 17.5% of the respondent shows that they are not encountered much of the problems listed, followed by 25% of respondents indicated that they had no problems with logging on to their system. 16.75%of the respondent had little difficulty in accessing the software, while 16.25%of the respondents are able to submit their answer so easy.16.5% of the respondent had issues with editing their answers. 16% of the respondent had quick interaction with the security of the system.

**Table 7: Useful solutions to provide in solving problems faced by students of (CBE) system.**

	SA	AG	SD	DA	UD	TOTAL	%
Educational presentation at the workshop promote (CBE) system	18 (4.5%)	17 (4.3%)	15 (3.7%)	16 (4%)	14 (3.5%)	80	20%
Evaluation of facilities as regard the (CBE) system promotesbetter perception of (CBE)	16 (4%)	20 (5%)	17 (4.3%)	13 (3.3%)	12 (3%)	78	19.5%

Tutorial and simple test to address anxiety will improve (CBE) system	20 (5%)	17 (4.3%)	15 (3.8%)	14 (3.5%)	13 (3.3%)	79	19.75%
Users group meeting, newsletter, conference call, promote better perception of(CBE) system	19 (4.8%)	18 (4.5%)	16 (4%)	14 (3.5%)	13 (3.3%)	80	20%
Website development as the effective adopted method of promoting(CBE) exam.	21 (5.3%)	17 (4.3%)	17 (4.3%)	15 (3.8%)	13 (3.3%)	83	20.75%
<b>Total</b>						<b>400</b>	<b>100%</b>

From Table 7 above, 4.5% of students strongly agreed that educational presentation at workshop or conference promote computer based examination (CBE), while 4.3% agreed. 3.7% respondents strongly disagreed, and 4% disagreed with the statement. Only 3.5% of the respondents were undecided. 4% of the respondents were strongly agreed on evaluation of facilities in promoting better perception of computer based examination (CBE). 5% of the respondents were agreed,4.3% were strongly disagreed and 3.3% disagreed, while 3% of the remaining respondents were undecided. 5% of the respondents were strongly agreed that 'tutorial and sample tests to minimize pre-test anxiety will improve computer based examination (CBE). 4.3% agreed,3.8% were strongly disagreed, while 3.5% disagreed and only 3.3% were undecided. 4.8% of the respondents were strongly agreed on users group meeting, newsletter workshop or conference call in promoting better perception of computer based examination (CBE),while4.5% agreed. 4% of the respondents were strongly disagreed, while 3.5% of the respondents disagreed. Only3.3% were undecided. 5.3% of the respondents were strongly agreed on the website development as the effective method adopted for promoting computer based examination (CBE).4.3% were agreed, 4.3% of the respondents were strongly disagreed, and 3.8% disagreed, while 3.3% were undecided. This shows that respondents were highly interested about helpful solution provide in promoting perception of computer based examination (CBE).

## V. CONCLUSION

Because of the nature of undergraduate student offer library (101) courses, examiners should take into the cognizance of this nature in deciding courses that CBE mode is appropriate for their examinations. Findings of this research shows that the mistake in question and inadequate time were among the students' failure with CBE mode of assessment. It is therefore be recommended that examination question prepared for this assessment should be made free of mistake, also, there must be adequate timing. The result also showed that, the larger part of the respondents were academically performed well and few of them fairly performed, likewise of computer familiarity, average and low students were complained of not familiar with the computer system, while fairly large students were familiarized with the computer system.It can therefore be concluded that students should be train to improve in the use of computer system. The result also indicated that, a positive, efficient and conducive environment provided by CBE system, draw out results automatically. The threat felt when taking CBE compared to the paper- based, the positive experience it offer and its efficiency are important consideration for this mode of assessment. The researcher is conclude that there is need for training and retraining on general use of computer for students before participating in CBE system. The result also showed that the problem faced by the students such as logging on, accessing software submission of answer, editing, security of the system, fairly large number of students meet up with the items listed above and few of them were unable to meet up with the problem. It can also be concluded to train students on the use of computer system.

## VI. RECOMMENDATION

Saad (2009). Had categorized recommendations by students into two, which are those that are easily implemented and the ones which could be interact able. Fortunately, all recommendations found in this study fall under the category of the tractable ones and can even be classified as fundamental good practices required for any CBE settings. Students have been expressing their opinion with respect to the mistake in question and inadequate time as the cause of student's failure with CBE mode of assessment, therefore, it's recommended that the examination question prepared for the assessment should be free of mistake, also there must be adequate timing. The issue of familiarization with the computer system. The researcher is therefore recommended the need for training and retraining on general use of computer for students before participating in CBE system.

Also because of cases where correction of software can corrupt scores, it is therefore recommended the use of more robust software to prevent, detect and correct mistakes. Other problems faced by the students such as logging on the system, software submission of answer editing, and the security of the system, it is advisable for the administrative process to employ highly skilled professional who will attend to examinees' problems adequately in a humane manner and not frighten students with their responses. Lastly, according to (John et al.2002). To address the strenuous pre-test environment, it is therefore recommended more systems for larger accommodation with the provision of better conducive environment and more chairs. Nevertheless, studies have identified this to be a common problem for all CBE settings but the problem could be lessened to a maximum level.

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